Search Results -

Term	Documents
(7 NOT 3).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	33
(L7 NOT L3).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	33

Database: US Patents Full-Text Database; US Pre-Grant Publication Full-Text Database; JPO Abstracts Database; EPO Abstracts Database; Derwent World Patents Index; IBM Technical Disclosure Bulletins

Search: L8

Refine Search

Recall Text Clear

Search History

DATE: Tuesday, August 05, 2003 Printable Copy Create Case

Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; THES=ASSIGNEE; PLUR=YES; OP=AND			
L8	L7 not L3	33	L8
L7	L6 and (CpG)	33	L7
L6	(Interferon adj (treatment or therapy))	864	L6
L5	L3 not L4	4	L5
L4	L3 and (interferon or IFN?)	20	L4
L3	(CpG) same (polyG or poly-G or (poly adj G))	24	L3
L2	L1 and (polyG or (poly adj G))	3	L2
L1	Hartmann-Gunther.in.	15	L1

END OF SEARCH HISTORY

Status: Path 1 of [Dialog Information Services via Modem]

Status: Initializing TCP/IP using (UseTelnetProto 1 ServiceID pto-dialog)
Trying 31060000009999...Open

DIALOG INFORMATION SERVICES
PLEASE LOGON:
 ******** HHHHHHHH SSSSSSSS?
Status: Signing onto Dialog
 ****
ENTER PASSWORD:
 ******** HHHHHHHH SSSSSSSS? ********
Welcome to DIALOG
Status: Connected

Dialog level 02.18.00D

Last logoff: 04aug03 15:39:47
Logon file001 05aug03 15:25:17
           *** ANNOUNCEMENT ***
                     ***
--File 654 - US published applications from March 15, 2001 to the
present are now online. Please see HELP NEWS 654 for details.

                     ***
--File 581 - The 2003 annual reload of Population Demographics is
complete. Please see Help News581 for details.

                     ***
                     ***
--File 990 - NewsRoom now contains February 2003 to current records.
File 992 - NewsRoom 2003 archive has been newly created and contains
records from January 2003. The oldest months's records roll out of
File 990 and into File 992 on the first weekend of each month.
To search all 2003 records BEGIN 990, 992, or B NEWS2003, a new
OneSearch category.
                     ***
--Connect Time joins DialUnits as pricing options on Dialog.
See HELP CONNECT for information.
                     ***
                     ***
--SourceOne patents are now delivered to your email inbox
as PDF replacing TIFF delivery. See HELP SOURCE1 for more
information.
                     ***
--Important news for public and academic
libraries. See HELP LIBRARY for more information.
                     ***
--Important Notice to Freelance Authors--
See HELP FREELANCE for more information
                     ***
NEW FILES RELEASED
***World News Connection (File 985)
***Dialog NewsRoom - 2003 Archive (File 992)
***TRADEMARKSCAN-Czech Republic (File 680)
***TRADEMARKSCAN-Hungary (File 681)
***TRADEMARKSCAN-Poland (File 682)
                     ***
UPDATING RESUMED
                     ***
RELOADED
***Population Demographics -(File 581)
***CLAIMS Citation (Files 220-222)

REMOVED

```
                    ***

      >>> Enter BEGIN HOMEBASE for Dialog Announcements <<<
      >>>    of new databases, price changes, etc.      <<<
                    ****
KWIC is set to 50.
HILIGHT set on as '*'
* * * * See HELP NEWS 225 for information on new search prefixes
and display codes

***                                    ***


File   1:ERIC  1966-2003/Jul 23
       (c) format only 2003 The Dialog Corporation

      Set  Items  Description
      ---  -----  -----------
Cost is in DialUnits
?b 155, 159, 5, 73
       05aug03 15:25:32 User259876 Session D529.1
            $0.32    0.092 DialUnits File1
     $0.32  Estimated cost File1
     $0.06  TELNET
     $0.38  Estimated cost this search
     $0.38  Estimated total session cost   0.092 DialUnits


SYSTEM:OS  - DIALOG OneSearch
  File 155:MEDLINE(R)  1966-2003/Aug W1
        (c) format only 2003 The Dialog Corp.
*File 155: Medline has been reloaded and accession numbers have
changed.  Please see HELP NEWS 155.
  File 159:Cancerlit  1975-2002/Oct
        (c) format only 2002 Dialog Corporation
*File 159: Cancerlit ceases updating with immediate effect.
Please see HELP NEWS.
  File   5:Biosis Previews(R)  1969-2003/Jul W4
        (c) 2003 BIOSIS
  File  73:EMBASE  1974-2003/Jul W4
        (c) 2003 Elsevier Science B.V.
*File  73: Alert feature enhanced for multiple files, duplicates
removal, customized scheduling. See HELP ALERT.

      Set  Items  Description
      ---  -----  -----------
?s (CpG) same (IFN-?)
      S1       0  (CPG) SAME (IFN-?)
?s (CpG) and (IFN-?)
           19264  CPG
            8196  IFN-?
      S2      97  (CPG) AND (IFN-?)
?s s2 and poly(G)
              97  S2
               6  POLY(G)
      S3       0  S2 AND POLY(G)
?s (interferon (w) alpha) (w) (treatment or therapy)
Processing
          333020  INTERFERON
         1581512  ALPHA
         4541472  TREATMENT
         5157998  THERAPY
      S4    3415  (INTERFERON (W) ALPHA) (W) (TREATMENT OR THERAPY)
?s s2 and s4
              97  S2
            3415  S4
      S5       0  S2 AND S4
```

```
?s s4 and review
            3415  S4
         1447649  REVIEW
      S6     137  S4 AND REVIEW
?s s6 not py<2000
Processing
Processing
             137  S6
        32472006  PY<2000
      S7      70  S6 NOT PY<2000
?rd
...examined 50 records  (50)
...completed examining records
      S8      37  RD (unique items)
?t s8 and (cancer or tumor or tumour)
>>>'AND' not allowed in command
?s s8 and (cancer or tumor or tumour)
             37  S8
         2275915  CANCER
         2148933  TUMOR
          274427  TUMOUR
      S9      10  S8 AND (CANCER OR TUMOR OR TUMOUR)
?t s9/3,k/all
```

9/3,K/1 (Item 1 from file: 155)

DIALOG(R)File 155:MEDLINE(R)
(c) format only 2003 The Dialog Corp. All rts. reserv.

13992993 22270641 PMID: 12382524

Critical appraisal of IFN-alpha-based adjuvant therapy in stage II-III malignant melanoma.

Eggermont Alexander M M; et al

Department of Surgical Oncology, Erasmus University Medical Center, Daniel den Hoed Cancer Center, 301 Groene Hilledijk, 3075 EA Rotterdam, The Netherlands. eggermont@chih.azr.nl

Expert review of anticancer therapy (England) Oct 2002, 2 (5) p563-9 , ISSN 1473-7140 Journal Code: 101123358

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: In Process

... has been extensively evaluated in the adjuvant setting for patients with Stage II-III melanoma in spite of a lack of efficacy or proof that *interferon*-*alpha* *treatment* improves survival in Stage IV melanoma. Here, 12 prospective controlled Phase III trials are discussed. Adjuvant therapy with interferon-alpha has a consistent effect on...

... at further follow-up and furthermore, was not confirmed by the subsequent E1690 trial, nor was the survival benefit confirmed by a recently published systematic *review* of the adjuvant trials. In the absence of a clear indication that *interferon*-*alpha* *therapy* has an impact on survival, whereas important toxicity is associated with *tumor* necrosis factor-based treatment, interferon-alpha adjuvant therapy cannot be considered standard treatment. It is too early for definitive analysis of the three largest trials...

9/3,K/2 (Item 2 from file: 155)

DIALOG(R)File 155:MEDLINE(R)
(c) format only 2003 The Dialog Corp. All rts. reserv.

09966668 21890703 PMID: 11893644

Case report: Kasabach-Merritt syndrome: a *review* of the therapeutic options and a case report of successful treatment with radiotherapy and interferon alpha.

Hesselmann S; Micke O; Marquardt T; Baas S; Bramswig J H; Harms E;

Willich N
Departments of Radiotherapy and Pediatrics, University Hospital Muenster, Albert-Schweitzer-Strasse 33, D-48149 Muenster, Germany.
British journal of radiology (England) Feb 2002, 75 (890) p180-4, ISSN 0007-1285 Journal Code: 0373125
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

Case report: Kasabach-Merritt syndrome: a *review* of the therapeutic options and a case report of successful treatment with radiotherapy and interferon alpha.

We describe the successful treatment of a neonate with Kasabach-Merritt syndrome who received local irradiation and *interferon* *alpha* *therapy* after failure of corticosteroid treatment. A male neonate, born after an uneventful pregnancy, had a huge haemangioma involving the upper right cervical region as well...

... 5 mg kg(-1) day(-1)) was started at 41 days of age. No therapeutic effect was observed after 2 weeks. At this time the *tumour* size had increased dramatically, platelet counts had decreased progressively and coagulation abnormalities had developed. Because corticosteroid therapy had been ineffective and the child was in...

...life-threatening condition, irradiation was delivered up to a total dose of 9.5 Gy in five fractions. Simultaneously, prednisolone therapy was slowly decreased and *interferon* *alpha* *therapy* (3 million U m(-2) day(-1)) was started and continued for 6 weeks. After irradiation with 9.5 Gy and beginning *interferon* *alpha* *therapy*, the *tumour* decreased in size and coagulation parameters normalized within 4 weeks. 6 months later, platelet counts and coagulation parameters were still normal. The *tumour* had further decreased in size. No acute severe side effects were observed. Radiation therapy combined with *interferon* *alpha* *treatment* is an alternative treatment modality when high dose corticoid steroid therapy has been ineffective in patients with Kasabach-Merritt syndrome, despite the risks of growth...

9/3,K/3 (Item 3 from file: 155)

09273411 21006379 PMID: 11144017

[Hepatocellular carcinoma. Part 2. Treatment]

Carcinoma hepatocelular. Parte 2. Tratamento.

Conte V P
Departamento de Gastroenterologia da Faculdade de Medicina da Universidade de Sao Paulo, Sao Paulo, SP.

Arquivos de gastroenterologia (Brazil) Apr-Jun 2000, 37 (2) p133-43, ISSN 0004-2803 Journal Code: 15310600R
Document type: Journal Article; Review; Review, Tutorial ; English Abstract
Languages: PORTUGUESE
Main Citation Owner: NLM
Record type: Completed

... special attention to evaluate the role of surgery for the disease. Considering that definitive surgical intervention is not feasible in most cases because of extreme *tumor* extension, multiplicity of *tumor* foci, and associated advanced liver cirrhosis at the time of diagnosis, others forms of treatment are listed, such as transcatheterarterial chemoembolization, percutaneous ethanol and acetic...
... no indication for standard treatments. The emerging role of retinoic acid metabolism blocking agents, was examined and may offer a significant new potential treatment for *cancer* , inclusive the possibility of combining other anticancer drugs with exogenous retinoids or modulation of

endogenous retinoids as a[illegible]eal opportunity to advance our [illegible]ility to treat or prevent human *cancer* effectively Octreotide, nitrosamine and other drugs are analyzed and is concluded that improves survival and is a valuable alternative in the treatment of inoperable hepatocellular...

... experience, it has now been developed sufficiently to study its effect on these patients survival. The homeostatic control of angiogenesis and its influences on the *tumor* growth and for migration of metastatic cells, was focused in this concise *review*, given that hepatocytes are the source of much of the precursor pool, regulation of angiogenesis may be regarded as a new liver function with important consequences for tissue repair and *cancer* . Early hepatocellular carcinoma and its recognition in routine clinical practice contributes to improved patients survival. Recombinant-*Interferon*-*alpha* *therapy* surely prevents, the development of cirrhosis or hepatocellular carcinoma in about one-third of patients, with chronic hepatitis C, with sustained response. Finally, in individuals...

9/3,K/4 (Item 1 from file: 73)

11945725 EMBASE No: 2003056481

Ribavirin in *cancer* immunotherapies: Controlling nitric oxide augments cytotoxic lymphocyte function

Kast R.E.
Dr. R.E. Kast, College of Medicine, University of Vermont, 2 Church St., Burlington, VT 05401 United States
AUTHOR EMAIL: rekast@email.com

Neoplasia (NEOPLASIA) (United States) 2003, 5/1 (3-8)
CODEN: NEOPF ISSN: 1522-8002
DOCUMENT TYPE: Journal ; Review
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 54

Ribavirin in *cancer* immunotherapies: Controlling nitric oxide augments cytotoxic lymphocyte function

...RBV) or cyclophosphamide (CY) can shift an immune response from Th2 toward a Th1 cytokine profile. CY is used in this role in various current *cancer* immunotherapy attempts but with mixed success. More potent and reliable immunoadjuvants and Th1 response biasing methods are needed. RBV is used today mainly to augment *interferon*-*alpha* *treatment* of hepatitis C. RBV shifts an immune response from Th2 toward Th1 more effectively than CY and may be a safe and useful adjuvant for current *cancer* immunotherapeutic efforts. RBV is thought to act by inhibition of tetrahydrobiopterin synthesis. Tetrahydrobiopterin is an essential cofactor for all known isoforms of nitric oxide synthase...

DRUG DESCRIPTORS:
...immunological adjuvant; alpha interferon--drug combination--cb; alpha interferon--drug therapy--dt; tetrahydrobiopterin--endogenous compound--ec; nitric oxide synthase--endogenous compound--ec; phosphoryl lipid A; *cancer* vaccine--drug therapy--dt; unclassified drug

MEDICAL DESCRIPTORS:
**cancer* immunotherapy
cytotoxic T lymphocyte; Th2 cell; Th1 cell; immune response; hepatitis C --drug therapy--dt; breast *cancer*--drug therapy--dt; colon *cancer*--drug therapy--dt; antibody response; multiple myeloma; human; nonhuman; *review* ; priority journal

SECTION HEADINGS:
016 *Cancer*
026 Immunology, Serology and Transplantation
030 Clinical and Experimental Pharmacology
037 Drug Literature Index

9/3,K/5 (Item 2 from file: 73)

DIALOG(R)File 73:EMBASE

11561115 EMBASE No: 2002134294
The current status of *interferon*-*alpha* *treatment* in advanced renal *cancer*
Stebbing J.; Gore M.
J. Stebbing, Department of Medicine, Royal Marsden NHS Trust, London United Kingdom
BJU International (BJU INT.) (United Kingdom) 2001, 87/7 (599-601)
CODEN: BJINF ISSN: 1464-4096
DOCUMENT TYPE: Journal ; Review
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 20

The current status of *interferon*-*alpha* *treatment* in advanced renal *cancer*

There are three phase III trials including 573 patients that show a statistically significant survival advantage to patients receiving interferon-alpha. A Cochrane Database Systematic *Review* evaluated immunotherapy for advanced RCC [15]; these authors selected 42 studies involving 4216 patients (survival was reported in 26 trials, 3089 patients). The results indicate...
MEDICAL DESCRIPTORS:
*kidney *cancer*--disease management--dm; *kidney *cancer*--drug therapy --dt
disease course; nephrectomy; *cancer* survival; metastasis--complication --co; *cancer* regression; drug efficacy; side effect--side effect--si; antineoplastic activity; phagocytosis; macrophage; influenza--side effect --si; fever--side effect--si; nausea--side effect--si; depression...

...irritability; pain--side effect--si; sleep disorder--side effect--si; anxiety neurosis--side effect--si; constipation--side effect--si; diarrhea --side effect--si; dose response; *cancer* immunotherapy; human; clinical trial; *review*; priority journal
SECTION HEADINGS:
016 *Cancer*
028 Urology and Nephrology
036 Health Policy, Economics and Management
037 Drug Literature Index
038 Adverse Reaction Titles

9/3,K/6 (Item 3 from file: 73)
DIALOG(R)File 73:EMBASE

11549986 EMBASE No: 2002121484
Cytogenetic and molecular genetic evolution of chronic myeloid leukemia
Johansson B.; Fioretos T.; Mitelman F.
Dr. B. Johansson, Department of Clinical Genetics, University Hospital, SE-221 85 Lund Sweden
AUTHOR EMAIL: bertil.johansson@klingen.lu.se
Acta Haematologica (ACTA HAEMATOL.) (Switzerland) 2002, 107/2 (76-94)
CODEN: ACHAA ISSN: 0001-5792
DOCUMENT TYPE: Journal ; Review
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 206

...abnormalities preceding, or occurring during, BC include overexpression of the BCR/ABL transcript, upregulation of the EVI1 gene, increased telomerase activity, and mutations of the *tumor* suppressor genes RB1, TP53, and CDKN2A. The cytogenetic evolution patterns vary significantly in relation to treatment given during CP. For example, +8 is more common after busulfan than hydroxyurea therapy, and the secondary changes seen after *interferon*-*alpha* *treatment* or bone marrow

transplantation are often unusual, seemingly random, and occasionally transient. Apart from the strong phenotypic impact of addition of acute myeloid leukemia/myelodysplasia...
MEDICAL DESCRIPTORS:
...chromosome 19q; chromosome 17q; chromosome 11q; chromosome 12q; chromosome 9q; chromosome 6q; chromosome 5q; chromosome 3q; chromosome 1q; cytogenetics; monosomy 7--etiology--et; enzyme activity; *tumor* suppressor gene; bone marrow transplantation; gene deletion; lymphoid cell; bone marrow cell; chromosome rearrangement; chromosome banding pattern; genetic variability; chromosome breakage; prognosis; chromosome aberration; human; *review*; priority journal
SECTION HEADINGS:
016 *Cancer*
022 Human Genetics
025 Hematology
037 Drug Literature Index

9/3,K/7 (Item 4 from file: 73)
DIALOG(R)File 73:EMBASE

11542997 EMBASE No: 2002115558
Kasabach-Merritt syndrome: A *review* of the therapeutic options and a case report of successful treatment with radiotherapy and interferon alpha
Hesselmann S.; Micke O.; Marquardt T.; Baas S.; Bramswig J.H.; Harms E.; Willich N.
Dr. S. Hesselmann, Department of Radiotherapy, University Hospital Muenster, Albert-Schweitzer-Strasse 33, D-48149 Muenster Germany
British Journal of Radiology (BR. J. RADIOL.) (United Kingdom) 2002, 75/890 (180-184)
CODEN: BJRAA ISSN: 0007-1285
DOCUMENT TYPE: Journal ; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 44

Kasabach-Merritt syndrome: A *review* of the therapeutic options and a case report of successful treatment with radiotherapy and interferon alpha

We describe the successful treatment of a neonate with Kasabach-Merritt syndrome who received local irradiation and *interferon* *alpha* *therapy* after failure of corticosteroid treatment. A male neonate, born after an uneventful pregnancy, had a huge haemangioma involving the upper right cervical region as well...

...5 mg kgSUP-1 daySUP-1) was started at 41 days of age. No therapeutic effect was observed after 2 weeks. At this time the *tumour* size had increased dramatically, platelet counts had decreased progressively and coagulation abnormalities had developed. Because corticosteroid therapy had been ineffective and the child was in...

...life-threatening condition, irradiation was delivered up to a total dose of 9.5 Gy in five fractions. Simultaneously, prednisolone therapy was slowly decreased and *interferon* *alpha* *therapy* (3 million U mSUP-2 daySUP-1) was started and continued for 6 weeks. After irradiation with 9.5 Gy and beginning *interferon* *alpha* *therapy*, the *tumour* decreased in size and coagulation parameters normalized within 4 weeks. 6 months later, platelet counts and coagulation parameters were still normal. The *tumour* had further decreased in size. No acute severe side effects were observed. Radiation therapy combined with *interferon* *alpha* *treatment* is an alternative treatment modality when high dose corticoid steroid therapy has been ineffective in patients with Kasabach-Merritt syndrome, despite the risks of growth...
MEDICAL DESCRIPTORS:
case report; human; newborn; male; treatment failure; pregnancy; hemangioma ; thrombocytopenia; disease severity; drug effect; *cancer* size; thrombocyte count; blood clotting; radiation dose fractionation; side

effect--side effect--si; [redacted]g megadose; drug efficacy; ris[redacted]*cancer* growth; malignant neoplastic disease; drug response; cervical spine; article
SECTION HEADINGS:
025 Hematology
014 Radiology
016 *Cancer*
038 Adverse Reaction Titles
037 Drug Literature Index

9/3,K/8 (Item 5 from file: 73)
DIALOG(R)File 73:EMBASE

10885374 EMBASE No: 2000368934
Hepatocelular carcinoma. Part 2. Therapy
CARCINOMA HEPATOCELULAR. PARTE 2. TRATAMENTO
Conte V.P.
Dr. V.P. Conte, Av. Brigadeiro Faria Lima, 1993 - Cj. 21 - 01451-001, SP Brazil
Arquivos de Gastroenterologia (ARQ. GASTROENTEROL.) (Brazil) 2000, 37/2 (133-143)
CODEN: ARQGA ISSN: 0004-2803
DOCUMENT TYPE: Journal; Review
LANGUAGE: PORTUGUESE SUMMARY LANGUAGE: ENGLISH; PORTUGUESE
NUMBER OF REFERENCES: 64

...special attention to evaluate the role of surgery for the disease. Considering that definitive surgical intervention is not feasible in most cases because of extreme *tumor* extension, multiplicity of *tumor* foci, and associated advanced liver cirrhosis at the time of diagnosis, others forms of treatment are listed, such as transcatheterarterial chemoembolization, percutaneous ethanol and acetic...

...no indication for standard treatments. The emerging role of retinoic acid metabolism blocking agents, was examined and may offer a significant new potential treatment for *cancer*, inclusive the possibility of combining other anticancer drugs with exogenous retinoids or modulation of endogenous retinoids as a real opportunity to advance our ability to treat or prevent human *cancer* effectively. Octreotide, nitrosamine and other drugs are analyzed and is concluded that improves survival and is a valuable alternative in the treatment of inoperable hepatocellular...

...experience, it has now been developed sufficiently to study its effect on these patients survival. The homeostatic control of angiogenesis and its influences on the *tumor* growth and for migration of metastatic cells, was focused in this concise *review*, given that hepatocytes are the source of much of the precursor pool, regulation of angiogenesis may be regarded as a new liver function with important consequences for tissue repair and *cancer*. Early hepatocellular carcinoma and its recognition in routine clinical pratice contributes to improved patients survival. Recombinant-*Interferon*-*alpha* *therapy* surely prevents, the development of cirrhosis or hepatocellular carcinoma in about one-third of patients, with chronic hepatitis C, with sustained response. Finally, in individuals...
DRUG DESCRIPTORS:
alcohol; acetic acid; aflatoxin B1; iodinated poppyseed oil; iodine 131; retinoic acid; retinoid; *tumor* necrosis factor; transforming growth factor beta; epidermal growth factor; antineoplastic agent--drug therapy --dt; etoposide--drug therapy--dt; tamoxifen--drug therapy--dt; flutamide --drug therapy...
MEDICAL DESCRIPTORS:
liver *cancer*--drug therapy--dt; liver *cancer*--etiology--et; liver *cancer*--prevention--pc; liver *cancer*--radiotherapy--rt; liver *cancer* --surgery--su; liver *cancer*--therapy--th; *cancer* therapy; laser coagulation; *cancer* chemotherapy; liver transplantation; liver cirrhosis --surgery--su; hepatitis C--drug therapy--dt; chronic hepatitis--drug

therapy--dt; *cancer* survival; artificial embolism; *cancer* prevention; human; major clinical study; clinical article; clinical trial; controlled study; *review*
SECTION HEADINGS:
009 Surgery
014 Radiology
016 *Cancer*
037 Drug Literature Index
048 Gastroenterology

9/3,K/9 (Item 6 from file: 73)
DIALOG(R)File 73:EMBASE

10786975 EMBASE No: 2000267225
Cardiological complications of *interferon* *alpha* *therapy*
POWIKLANIA KARDIOLOGICZNE LECZENIA INTERFERONEM alpha
Rajch M.
M. Rajch, Kat. i Klin. Chorob Zakaznych AM, ul. Kniaziewicza 1/5, 91-347 Lodz Poland
Hepatologia Polska (HEPATOL. POL.) (Poland) 2000, 7/1 (39-43)
CODEN: HPOLF ISSN: 1232-9878
DOCUMENT TYPE: Journal; Review
LANGUAGE: POLISH SUMMARY LANGUAGE: ENGLISH; POLISH
NUMBER OF REFERENCES: 41

Cardiological complications of *interferon* *alpha* *therapy*

...with immunomodulatory, antiproliferative and antiviral properties. Therefore it has been approved for the treatment of many viral (such as chronic hepatitis B and C) and *cancer* diseases. Many adverse effects of interferon alfa therapy have been described. Some of them are very common, some are rare. Cardiovascular side effects are infrequent...

...ischaemic heart disease and cardiomiopathy. However, importance of circular system forces to draw attention to that problem. The purpose of the present report is to *review* the literature on interferon-related cardio-toxicity, to describe the various manifestations of cardiotoxicity and to determine the risk factors possibly associated with interferon effects...
MEDICAL DESCRIPTORS:
drug approval; immunotherapy; heart arrhythmia--side effect--si; ischemic heart disease--side effect--si; risk factor; human; human tissue; human cell; *review*

9/3,K/10 (Item 7 from file: 73)
DIALOG(R)File 73:EMBASE

10560352 EMBASE No: 2000025166
Musculoskeletal and systemic reactions to biological therapeutic agents
Watts R.A.
Dr. R.A. Watts, Ipswich Hospital, Heath Road, Suffolk IP4 5PD United Kingdom
AUTHOR EMAIL: Rwatts@Dial.pipex.com
Current Opinion in Rheumatology (CURR. OPIN. RHEUMATOL.) (United States) 2000, 12/1 (49-52)
CODEN: CORHE ISSN: 1040-8711
DOCUMENT TYPE: Journal; Review
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

...only suppress autoimmune disease but may also potentiate it. Interferon-alpha and interferon-beta both may induce autoimmune disease, but this is more frequent with *interferon*-*alpha*, *Therapy* to block *tumor* necrosis factor-alpha, either with monoclonal anti-bodies or fusion

proteins, has been associated with the development of antinuclear antibodies, but only rarely with clinical development of SLE. None of the three reported cases of SLE occurring after anti-*tumor* necrosis factor-alpha therapy has developed major organ involvement. The continued use of biologic agents will provide interesting insights into the pathogenesis of autoimmune disease.
DRUG DESCRIPTORS:
...reaction--ae; DNA antibody--endogenous compound--ec; etanercept--adverse drug reaction--ae; etanercept--drug therapy--dt; infliximab--adverse drug reaction--ae; infliximab--drug therapy--dt; *tumor* necrosis factor antibody--endogenous compound--ec
MEDICAL DESCRIPTORS:
...drug safety; antibody response; serum sickness--etiology--et; serum sickness--side effect--si; drug induced disease--etiology--et; drug induced disease--side effect--si; human; *review*; priority journal
...CAS REGISTRY NO.: 200013-86-1 (etanercept); 170277-31-3 (infliximab); 162774-06-3 (*tumor* necrosis factor antibody)
?ds

Set	Items	Description
S1	0	(CPG) SAME (IFN-?)
S2	97	(CPG) AND (IFN-?)
S3	0	S2 AND POLY(G)
S4	3415	(INTERFERON (W) ALPHA) (W) (TREATMENT OR THERAPY)
S5	0	S2 AND S4
S6	137	S4 AND REVIEW
S7	70	S6 NOT PY<2000
S8	37	RD (unique items)
S9	10	S8 AND (CANCER OR TUMOR OR TUMOUR)

?s s7 and (viral (w) infection)

	70	S7
	711788	VIRAL
	1807865	INFECTION
	34033	VIRAL(W)INFECTION
S10	0	S7 AND (VIRAL (W) INFECTION)

?s s2 and (interferon (w) alpha)

	97	S2
	333020	INTERFERON
	1581512	ALPHA
	51929	INTERFERON(W)ALPHA
S11	23	S2 AND (INTERFERON (W) ALPHA)

?rd
...completed examining records

S12	23	RD (unique items)

?t s12/3,k/all

12/3,K/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2003 The Dialog Corp. All rts. reserv.

14203990 22317138 PMID: 12429724
***CpG*-DNA-induced IFN-alpha production involves p38 MAPK-dependent STAT1 phosphorylation in human plasmacytoid dendritic cell precursors.**
Takauji Rumiko; Iho Sumiko; Takatsuka Hisakazu; Yamamoto Saburo; Takahashi Takayuki; Kitagawa Harukazu; Iwasaki Hiromichi; Iida Reiko; Yokochi Takashi; Matsuki Takasumi; et al
Department of Forensic Medicine, Fukui Medical University, Yochida-gun, Japan.
Journal of leukocyte biology (United States) Nov 2002, 72 (5) p1011-9, ISSN 0741-5400 Journal Code: 8405628
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

***CpG*-DNA-induced IFN-alpha production involves p38 MAPK-dependent STAT1 phosphorylation in human plasmacytoid dendritic cell precursors.**

...cells of innate immunity and link it to the distinct adaptive immunity by differentiating into mature DC. It has been reported that oligodeoxyribonucleotides containing unmethylated *CpG* motifs (*CpG* DNA) stimulate PDC to produce IFN-alpha, but the molecular mechanisms involved remain unknown. We found that *CpG*-DNA-induced IFN-alpha production in PDC was completely impaired by the inhibitor of the p38 mitogen-activated protein kinase (MAPK) pathway. Expression of IFN regulatory factor (IRF)-7 was enhanced by *CpG* -DNA treatment, which was preceded by the phosphorylation of signal transducer and activator of transcription (STAT)1 on Tyr-701, as well as its enhanced...

... by the p38 MAPK inhibitor. STAT1, STAT2, and IRF-9, components of IFN-stimulated gene factor 3 (ISGF3), were recognized in the nuclear fraction of *CpG*-DNA-treated cells. Neither anti-IFN-alpha/beta antibodies (Ab) nor anti-IFNAR Ab suppressed STAT1 phosphorylation, enhancement of IRF-7 expression, or IFN-alpha production in the early phase of the culture. These results suggest that *CpG* DNA induces p38 MAPK-dependent phosphorylation of STAT1 in a manner independent of IFN-alpha/beta, which may cause ISGF3 formation to increase the transcription...

Descriptors: DNA-Binding Proteins--metabolism--ME; *Dendritic Cells --immunology--IM; **Interferon*-*alpha*--biosynthesis--BI; *Mitogen-Activated Protein Kinases--physiology--PH; *Oligodeoxyribonucleotides --pharmacology--PD; *Trans-Activators--metabolism--ME; Cell Nucleus --chemistry--CH; Cells, Cultured; DNA-Binding Proteins--analysis--AN; DNA-Binding Proteins--biosynthesis--BI; DNA-Binding Proteins--chemistry --CH; Gene Expression Regulation; *Interferon*-*alpha*--genetics--GE; Kinetics; Models, Immunological; Phosphorylation; RNA, Messenger --biosynthesis--BI; Serine--metabolism--ME; Stem Cells--drug effects--DE; Stem Cells--immunology--IM; Trans-Activators--analysis...

Chemical Name: *CPG*-oligonucleotide; DNA-Binding Proteins; *IFN-stimulated gene factor 3 complex*; IRF-7 protein; *Interferon*-*alpha* ; Oligodeoxyribonucleotides; RNA, Messenger; Stat2 protein; Trans-Activators; Transcription Factors; gamma-activated factor, 91-kD; interferon regulatory factor-3; Tyrosine; Serine; Mitogen-Activated Protein Kinases; mitogen...

12/3,K/2 (Item 2 from file: 155)

09186856 20493557 PMID: 10924517

Regulation of the promoter activity of interferon regulatory factor-7 gene. Activation by interferon snd silencing by hypermethylation.

Lu R; Au W C; Yeow W S; Hageman N; Pitha P M

Oncology Center and Department of Molecular Biology and Genetics, The Johns Hopkins University School of Medicine, Baltimore, Maryland 21231, USA.

Journal of biological chemistry (UNITED STATES) Oct 13 2000, 275 (41) p31805-12, ISSN 0021-9258 Journal Code: 2985121R

Contract/Grant No.: R01 AI19737-17; AI; NIAID

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

.... cells. We have further shown that the previously observed lack of expression of IRF-7 in 2fTGH fibrosarcoma cell line, correlated with hypermethylation of the *CpG* island in the human IRF-7 promoter. The repression of the promoter activity was relieved by treatment with DNA methyltransferase inhibitor 5-aza-deoxycytidine. In...

Descriptors: DNA Methylation--drug effects--DE; *DNA-Binding Proteins --genetics--GE; *Gene Silencing--drug effects--DE; **Interferon*-*alpha* --pharmacology--PD; *Promoter Regions (Genetics)--genetics--GE; *Trans-Activation (Genetics)--drug effects--DE; Azacitidine--analogs and derivatives--AA; Azacitidine--pharmacology--PD; Base Sequence; Cloning, Molecular; *CpG* Islands--genetics--GE; DNA--genetics--GE; DNA--metabolism

--ME; DNA-Binding Proteins--metabolism--ME; Intr--genetics--GE; Molecular Sequence Data; Mutation--genetics--GE; Oligodeoxyribonucleotides --genetics...
Chemical Name: DNA-Binding Proteins; *IFN-stimulated gene factor 3 complex*; IRF-7 protein; *Interferon*-*alpha*; Oligodeoxyribonucleotides; Transcription Factors; 5-aza-2'-deoxycytidine; Azacitidine; DNA

12/3,K/3 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

14342154 BIOSIS NO.: 200300336183
Distinct Phases in Reconstituted Innate Immunity: Implications for Host Defense.
AUTHOR: Auletta Jeffery J(a); DeVecchio Jennifer L(a); Ferrara James L M(a); Heinzel Frederick P(a)
AUTHOR ADDRESS: (a)Pediatric Hematology/Oncology and Infectious Diseases, Rainbow Babies and Children's Hospital, Cleveland, OH, USA**USA
JOURNAL: Blood 100 (11):pAbstract No 1583 November 16 2002 2002
MEDIUM: print
CONFERENCE/MEETING: 44th Annual Meeting of the American Society of Hematology Philadelphia, PA, USA December 06-10, 2002
SPONSOR: American Society of Hematology
ISSN: 0006-4971
RECORD TYPE: Abstract
LANGUAGE: English

...ABSTRACT: lipopolysaccharide (LPS, (1mug/ml)); agonistic anti-CD40 (10mug/ml); anti-CD40 in combination with recombinant IL-4 (20ng/ml) and anti-IL-10 (10mug/ml); *CpG* oligonucleotides (10mug/ml); non-*CpG* control (10mug/ml); poly (I:C) (50mug/ml) and formalin-fixed Staphylococcus aureus Cowan A strain (SAC, 0.01%). To test for recovery of IFN...
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: *IFN-alpha *{*interferon*-*alpha*}--...

...*IFN-gamma *{interferon-gamma

12/3,K/4 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

14270345 BIOSIS NO.: 200300264374
Activation with *CpG*-A and *CpG*-B oligonucleotides reveals two distinct regulatory pathways of type I IFN synthesis in human plasmacytoid dendritic cells.
AUTHOR: Kerkmann Miren; Rothenfusser Simon; Hornung Veit; Towarowski Andreas; Wagner Moritz; Sarris Anja; Giese Thomas; Endres Stefan; Hartmann Gunther(a)
AUTHOR ADDRESS: (a)Abteilung fuer Klinische Pharmakologie, Medizinische Klinik Innenstadt, Ziemssenstrasse 1, 80336, Munich, Germany**Germany
E-Mail: ghartmann@lrz.uni-muenchen.de
JOURNAL: Journal of Immunology 170 (9):p4465-4474 May 1 2003 2003
MEDIUM: print
ISSN: 0022-1767
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

Activation with *CpG*-A and *CpG*-B oligonucleotides reveals two distinct regulatory pathways of type I IFN synthesis in human plasmacytoid dendritic cells.
ABSTRACT: Two different *CpG* oligonucleotides (ODN) were used to study the regulation of type I IFN in human plasmacytoid dendritic cells (PDC): ODN 2216, a *CpG*-A ODN, known to induce high amounts of IFN-alpha in PDC,

and ODN 2006, a *CpG*-B ODN, which is potent at stimulating B cells. *CpG*-A ODN showed higher and prolonged kinetics of type I IFN production compared with that of *CpG*-B ODN. In contrast, *CpG*-B ODN was more active than *CpG*-A ODN in stimulating IL-8 production and increasing costimulatory and Ag-presenting molecules, suggesting that *CpG*-A and *CpG*-B trigger distinct regulatory pathways in PDC. Indeed, *CpG*-A ODN, but not *CpG*-B ODN, activated the type I IFNR-mediated autocrine feedback loop. PDC were found to express high constitutive levels of IFN regulatory factor (IRF)7. IRF7 and STAT1, but not IRF3, were equally up-regulated by both *CpG*-A and *CpG*-B. CD40 ligand synergistically increased *CpG*-B-induced IFN-alpha independent of the IFNR but did not affect *CpG*-B-induced IFN-beta. In conclusion, our studies provide evidence for the existence of two distinct regulatory pathways of type I IFN synthesis in human...
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: *CpG*-A oligonucleotide...

...*CpG*-B oligonucleotide...

...*IFN-alpha *{*interferon*-*alpha*};

12/3,K/5 (Item 3 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

14251287 BIOSIS NO.: 200300245316
***CpG*-A-induced monocyte IFN-gamma-inducible protein-10 production is regulated by plasmacytoid dendritic cell-derived IFN-alpha.**
AUTHOR: Blackwell Sue E; Krieg Arthur M(a)
AUTHOR ADDRESS: (a)Coley Pharmaceutical Group, 93 Worcester Street, Suite 101, Wellesley, MA, 02481, USA**USA E-Mail: akrieg@coleypharma.com
JOURNAL: Journal of Immunology 170 (8):p4061-4068 April 15 2003 2003
MEDIUM: print
ISSN: 0022-1767
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

***CpG*-A-induced monocyte IFN-gamma-inducible protein-10 production is regulated by plasmacytoid dendritic cell-derived IFN-alpha.**

ABSTRACT: Unmethylated *CpG* motifs in bacterial DNA or synthetic oligodeoxynucleotides (ODN) are known for inducing a Th1 cytokine/chemokine environment, but the mechanisms regulating this have been unclear. Recent studies have defined two classes of *CpG* ODN, *CpG* -A ODN that induce plasmacytoid dendritic cells (pDC) to secrete very high levels of IFN-alpha, and *CpG*-B ODN that induce only low levels of IFN-alpha production, but strongly activate B cells. We now demonstrate that a *CpG*-A ODN directly activates pDC secretion of IFN-alpha and other soluble factors that secondarily induce purified monocytes to secrete high levels of the Th1...

...10). Cell contact between the monocytes and pDC is not required for this interaction. IFN-alpha is necessary, but only partially sufficient, for this indirect *CpG*-induced monocyte IP-10 production. Although *CpG* ODN induce human PBMC to make only very slight amounts of IFN-gamma, we find that these low concentrations synergize with IFN-alpha for inducing monocyte production of IP-10. These studies provide a better understanding of the mechanisms through which *CpG* ODN create a Th1-like environment.
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: *CpG*-A...

...*IFN-alpha *{*interferon*-*alpha*}--...

...*IFN-gamma-inducible protein-10 *{interferon-gamma-inducible protein-10

12/3,K/6 (Item 4 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

14169428 BIOSIS NO.: 200300163457
Cutting edge: Histamine inhibits IFN-alpha release from plasmacytoid dendritic cells.
AUTHOR: Mazzoni Alessandra; Leifer Cynthia A; Mullen Gregory E D; Kennedy Margaret N; Klinman Dennis M; Segal David M(a)
AUTHOR ADDRESS: (a)National Institutes of Health, Building 10, Room 4B36, Bethesda, MD, 20892-1360, USA**USA E-Mail: davesegal@nih.gov
JOURNAL: Journal of Immunology 170 (5):p2269-2273 March 1 2003 2003
MEDIUM: print
ISSN: 0022-1767
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

...ABSTRACT: in a change from Th1 to Th2 in their T cell polarizing function. In this study, we show that human plasmacytoid DC, activated by either *CpG* oligodeoxynucleotides or viral infection, also respond to histamine through H2 receptors, leading to a marked down-regulation of IFN-alpha and TNF-alpha and a...
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: *CpG* oligodeoxynucleotide...

...*IFN-alpha *{*interferon*-*alpha*}--

12/3,K/7 (Item 5 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

14115985 BIOSIS NO.: 200300110014
Effect of hsp65 DNA vaccination carrying immunostimulatory DNA sequences (*CpG* Motifs) against Mycobacterium leprae multiplication in mice.
AUTHOR: Nomaguchi Hiroko; Mukai Tetsu; Takeshita Fumihiko; Matsuoka Masanori; Maeda Yumi; Aye Tin Maung; Jahan Nilufar; Yogi Yasuko; Sato Masumi Endo Yukio; Makino Masahiko(a)
AUTHOR ADDRESS: (a)Leprosy Research Center, National Institute of Infectious Diseases, 4-2-1-Aobacho, Higashimurayma, Tokyo, 189-0002, Japan**Japan E-Mail: mmaki@nih.go.jp
JOURNAL: International Journal of Leprosy and Other Mycobacterial Diseases 70 (3):p182-190 September 2002 2002
MEDIUM: print
ISSN: 0148-916X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

Effect of hsp65 DNA vaccination carrying immunostimulatory DNA sequences (*CpG* Motifs) against Mycobacterium leprae multiplication in mice.
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: ...*IFN-alpha *{*interferon*-*alpha*}; *IFN-beta*...

...*IFN-gamma *{interferon-gamma

12/3,K/8 (Item 6 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

14065767 BIOSIS NO.: 200300059796
Murine plasmacytoid pre-dendritic cells generated from Flt3

ligand-supplemented bone marrow cultures are immature APC.
AUTHOR: Brawand Pierre(a); Fitzpatrick David R; Greenfield Brad W; Brasel Kenneth; Maliszewski Charles R; De Smedt Thibaut(a)
AUTHOR ADDRESS: (a)Amgen Inc., 51 University Street, Seattle, WA, 98101, USA**USA E-Mail: brawandp@amgen.com, desmedtt@amgen.com
JOURNAL: Journal of Immunology 169 (12):p6711-6719 December 15 2002 2002
MEDIUM: print
ISSN: 0022-1767
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

...ABSTRACT: expression distinct from that of classical CD11c+B220- dendritic cells and were poor T cell stimulators. Stimulation of CD11c+B220+ pDCs with oligodeoxynucleotides containing certain *CpG* motifs plus CD40 ligand plus GM-CSF led to increased MHC class II, CD80, CD86, and CD8alpha expression levels, to a switch in chemokine receptor ...
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: ...*IFN-alpha *{*interferon*-*alpha*}--

12/3,K/9 (Item 7 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13758857 BIOSIS NO.: 200200387678
***CpG* motifs in bacterial DNA and their immune effects.**
BOOK TITLE: Annual Review of Immunology
AUTHOR: Krieg Arthur M(a)
BOOK AUTHOR/EDITOR: Paul William E; Fathman C Garrison; Glimcher Laurie H: Eds
AUTHOR ADDRESS: (a)Department of Veterans Affairs Medical Center, Iowa City, IA, 52246**USA E-Mail: akrieg@coleypharma.com
JOURNAL: Annual Review of Immunology 20p709-760 2002
MEDIUM: print
BOOK PUBLISHER: Annual Reviews, 4139 El Camino Way, Palo Alto, CA, 94303-0139, USA
ISSN: 0732-0582 ISBN: 0-8243-3020-8 (cloth)
DOCUMENT TYPE: Book
RECORD TYPE: Citation
LANGUAGE: English

***CpG* motifs in bacterial DNA and their immune effects.**
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: *CpG*-containing oligodeoxynucleotides...
...*IFN-alpha *{*interferon*-*alpha*}--...

...bacterial DNA *CpG* motifs

12/3,K/10 (Item 8 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13724996 BIOSIS NO.: 200200353817
Novel and cell-specific activities of ISS (immunostimulatory sequence) ODNs in human preDC2s and B cells.
AUTHOR: Marshall Jason D(a); Subramanian Sandhya(a); Abbate Christi(a); Van Nest Gary(a)
AUTHOR ADDRESS: (a)Preclinical, Dynavax Technologies Corp., 717 Potter St., Ste. 100, Berkeley, CA, 94710**USA
JOURNAL: FASEB Journal 16 (4):pA321-A322 March 20, 2002
MEDIUM: print
CONFERENCE/MEETING: Annual Meeting of the Professional Research Scientists on Experimental Biology New Orleans, Louisiana, USA April 20-24, 2002
ISSN: 0892-6638

RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: We have defined a number of ISS (immunostimulatory sequence) ODNs containing *CpG* motifs that exhibit differential potencies in their induction of IFN-gamma or IFN-alpha from human PBMCs. To further characterize their activity, we examined highly...
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: ...*IFN-alpha *{*interferon*-*alpha*}; *IFN-gamma *{interferon-gamma...

...*CpG* motif, immunostimulatory sequence

12/3,K/11 (Item 9 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13724830 BIOSIS NO.: 200200353651
Regulation of IFN-alpha production in plasmacytoid dendritic cells by *CpG* oligonucleotides and CD40 ligand.
AUTHOR: Kerkmann Miren(a); Sarris Anja(a); Endres Stefan(a); Hartmann Gunther(a)
AUTHOR ADDRESS: (a)Department of Internal Medicine, Division of Clinical Pharmacology, Ludwig-Maximilians-University, Ziemssenstr.1, Munich, Bavaria, 80336**Germany
JOURNAL: FASEB Journal 16 (4):pA291 March 20, 2002
MEDIUM: print
CONFERENCE/MEETING: Annual Meeting of the Professional Research Scientists on Experimental Biology New Orleans, Louisiana, USA April 20-24, 2002
ISSN: 0892-6638
RECORD TYPE: Abstract
LANGUAGE: English

Regulation of IFN-alpha production in plasmacytoid dendritic cells by *CpG* oligonucleotides and CD40 ligand.

...ABSTRACT: cell (PDC) is characterized by the ability to produce large quantities of type I IFN upon viral infection. Recently we identified a new type of *CpG* ODN (*CpG* type A, prototype ODN 2216) which, in contrast to earlier sequences (*CpG* type B, prototype ODN 2006), stimulates very high amounts of type I IFN in PDC (400 ng/ml IFN-alpha) similar to a viral infection. Here we demonstrate that not only the amount but also the pathway of type I IFN induction differs between both types of *CpG* ODN. Blockade of the type I IFN receptor inhibited the production of IFN-alpha induced by *CpG* type A but even increased IFN-alpha production by *CpG* type B. CD40L which by itself was relatively poor at inducing IFN-alpha in PDC synergistically enhanced IFN-alpha production of *CpG* type B which was not reduced by type I IFN receptor blockade. Despite lower IFN-alpha induction, *CpG* type B was more potent than *CpG* type A to upregulate CD80, CD86, CD40 and MHC II on PDC. This effect was not dependent on functional type I IFN receptor for both *CpG* type A and *CpG* type B. In conclusion, a positive autocrine feedback loop via the type I IFN receptor is involved in the pathway which regulates IFN-alpha induction by *CpG* type A but not by *CpG* type B and CD40L. The different regulatory pathways of *CpG* type A and *CpG* type B in PDC support the concept that a distinct receptor molecule is involved in the recognition of *CpG* type A.
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: ...*CpG* oligonucleotides...
...*IFN-alpha *{*interferon*-*alpha*}--

12/3,K/12 (Item 10 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13724813 BIOSIS NO.: 20[redacted]0353634
Distinct *CpG* ODN with high IFN-alpha induction drive monocytes towards an activated phenotype which promotes the development of effector memory CD8 T cells.
AUTHOR: Sarris Anja(a); Krug Anne(a); Selinger Sibylle(a); Rothenfusser Simon(a); Bock Carmen(a); Jahrsdoerfer Bernd(a); Endres Stefan(a); Hartmann Gunther(a)
AUTHOR ADDRESS: (a)Department of Internal Medicine, Division of Clinical Pharmacology, Ludwig-Maximilians-University Munich, Ziemssenstrasse 1, Munich, Munich, 80336**Germany
JOURNAL: FASEB Journal 16 (4):pA288 March 20, 2002
MEDIUM: print
CONFERENCE/MEETING: Annual Meeting of the Professional Research Scientists on Experimental Biology New Orleans, Louisiana, USA April 20-24, 2002
ISSN: 0892-6638
RECORD TYPE: Abstract
LANGUAGE: English

Distinct *CpG* ODN with high IFN-alpha induction drive monocytes towards an activated phenotype which promotes the development of effector memory CD8 T cells.

ABSTRACT: Recently we identified a new type of *CpG* ODN which is characterized by the induction of high amounts of type I IFN in plasmacytoid dendritic cells resulting in strong NK cell activation. In the present study we examined the effects of this type of *CpG* ODN on human primary monocytes. In PBMC stimulated with *CpG* ODN and GMCSF, monocytes rapidly increased in size and granularity and within three days developed a phenotype characterized by partial downregulation of CD14, increased surface...

...memory T cells. Consistent with the lack of IL-12, Th1 versus Th2 bias of CD4 T cells was not affected. The generation of this *CpG* ODN-induced monocyte-derived cell type was dependent on the presence of IFN-alpha, but the addition of recombinant IFN-alpha was not sufficient for...
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: *CpG* ODN...

...*IFN-alpha *{*interferon*-*alpha*}--

12/3,K/13 (Item 11 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13447457 BIOSIS NO.: 200200076278
Importance of *CpG* dinucleotides in activation of natural IFN-alpha-producing cells by a lupus-related oligodeoxynucleotide.
AUTHOR: Magnusson M(a); Magnusson S; Vallin H; Ronnblom L; Alm G V
AUTHOR ADDRESS: (a)Immunology (V), BMC, SE-751 23, Uppsala**Sweden E-Mail: Mattias.Magnusson@vmm.slu.se
JOURNAL: Scandinavian Journal of Immunology 54 (6):p543-550 December, 2001
MEDIUM: print
ISSN: 0300-9475
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

Importance of *CpG* dinucleotides in activation of natural IFN-alpha-producing cells by a lupus-related oligodeoxynucleotide.

...ABSTRACT: the IFN-alpha-producing cells (IPC) were the natural IPC, also termed type 2 dendritic cell precursors (pDC2) or plasmacytoid monocytes. The importance of unmethylated *CpG* dinucleotides for the interferogenic activity of ODN was studied. Methylation of *CpG* impaired the activity of single-stranded (ss) ODN H, but increased that of the complementary ssODN I. Furthermore, *CpG*-methylated double-stranded (ds) ODN Hmet-Imet

lost, but hemimethylated dsODN H-Imet retained interferogenic activity. Inversion of the *CpG* to GpC had no effect on the interferogenic activity of ssODN H, increased that of ssODN I, however abolished the activity of dsODN H-I. Alteration of the *CpG* in ODN H to ApG and in the ODN I to CpT destroyed their activity. The induction of IFN-alpha is therefore sequence-specific, but...
DESCRIPTORS:
ORGANISMS: PARTS ETC: *IFN-alpha-producing cell *{*interferon*-*alpha* -producing cell...
CHEMICALS & BIOCHEMICALS: *CpG* dinucleotide...

...*IFN-alpha *{*interferon*-*alpha*};

12/3,K/14 (Item 12 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13440355 BIOSIS NO.: 200200069176
Distinct *CpG* oligonucleotide sequences activate human gammadelta T cells via *interferon*-*alpha*/-beta.
AUTHOR: Rothenfusser Simon; Hornung Veit; Krug Anne; Towarowski Andreas; Krieg Arthur M; Endres Stefan; Hartmann Gunther(a)
AUTHOR ADDRESS: (a)Department of Internal Medicine, Division of Clinical Pharmacology, University of Munich, Ziemssenstrasse 1, D-80336, Munich** Germany E-Mail: ghartmann@lrz.uni-muenchen.de
JOURNAL: European Journal of Immunology 31 (12):p3525-3534 December, 2001
MEDIUM: print
ISSN: 0014-2980
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

Distinct *CpG* oligonucleotide sequences activate human gammadelta T cells via *interferon*-*alpha*/-beta.

ABSTRACT: Oligodeoxynucleotides with *CpG* motifs (*CpG* ODN) mimic microbial DNA and activate effectors of innate immunity including NK cells. Human gammadelta T cells (Vgamma9/Vdelta2) are antigen specific "natural memory" T cells in a preactivated stage, which respond to common non-protein phosphoantigens. Among several *CpG* ODN tested, distinct *CpG* ODN sequences characterized by inducing high amounts of IFN-alpha/-beta in PBMC elicited strong gammadelta T cell and NK cell responses, as determined by CD69 expression, IFN-gamma production, perforin content and lytic activity. These *CpG* ODN activated gammadelta T cells and NK cells in the absence of an additional stimulus and synergistically increased responsiveness to cell-type-specific antigens like...

...gammadelta T cells and NK-sensitive tumor cells for NK cells. NK cells and gammadelta T cells were activated via IFN-alpha/-beta released by *CpG* ODN-stimulated PBMC. Purified gammadelta T cells and NK cells did not respond to *CpG* ODN but to recombinant IFN-alpha/-beta. In conclusion, *CpG* ODN sequences were identified which, based on their ability to induce high amounts of IFN-alpha/-beta, represent strong adjuvants for "natural memory" cells including...

...to non-protein antigens. Early IFN-alpha/-beta dependent stimulation of IFN-gamma synthesis in NK cells and gammadelta T cells may contribute to the *CpG* ODN-induced Th1 bias of an evolving immune response.
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: *CpG* oligonucleotide sequences...

...*IFN-gamma *{interferon-gamma...

...*interferon*-*alpha*/beta

12/3,K/15 (Item 13 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13361757 BIOSIS NO.: 200100568906
Type I interferon is required to mount an adaptive response to immunostimulatory DNA.
AUTHOR: Van Uden John H; Tran Christine H; Carson Dennis A; Raz Eyal(a)
AUTHOR ADDRESS: (a)Department of Medicine, University of California, San Diego, 9500 Gilman Drive, La Jolla, CA, 92093-0663: eraz@ucsd.edu**USA
JOURNAL: European Journal of Immunology 31 (11):p3281-3290 November, 2001
MEDIUM: print
ISSN: 0014-2980
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

ABSTRACT: Immunostimulatory DNA sequences (ISS, *CpG* motifs) potently stimulate Th1 and cytotoxic T lymphocyte (CTL) responses to antigens and have thus generated considerable interest due to their potential use in immunotherapeutics...
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: *IFN-alpha/beta receptor *{*interferon*-*alpha*/beta receptor...

...*IFN-gamma *{interferon-gamma...

...*CpG* motifs, ISS, sequences

12/3,K/16 (Item 14 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13320281 BIOSIS NO.: 200100527430
Toll-like receptor expression reveals *CpG* DNA as a unique microbial stimulus for plasmacytoid dendritic cells which synergizes with CD40 ligand to induce high amounts of IL-12.
AUTHOR: Krug Anne; Towarowski Andreas; Britsch Stefanie; Rothenfusser Simon ; Hornung Veit; Bals Robert; Giese Thomas; Engelmann Hartmut; Endres Stefan; Krieg Arthur M; Hartmann Gunther(a)
AUTHOR ADDRESS: (a)Division of Clinical Pharmacology, Medizinische Klinik Innenstadt, Klinikum der LMU, Ziemssenstrasse 1, D-80336, Munich: ghartmann@lrz.uni-muenchen.de**Germany
JOURNAL: European Journal of Immunology 31 (10):p3026-3037 October, 2001
MEDIUM: print
ISSN: 0014-2980
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

Toll-like receptor expression reveals *CpG* DNA as a unique microbial stimulus for plasmacytoid dendritic cells which synergizes with CD40 ligand to induce high amounts of IL-12.

...ABSTRACT: pattern of Toll-like receptor (TLR) expression. TLR1-TLR9 were examined in purified PDC and MDC. TLR9, which is critically involved in the recognition of *CpG* motifs in mice, was present in PDC but not in MDC. TLR4, which is required for the response to LPS, was selectively expressed on MDC. Consistent with TLR expression, PDC were susceptible to stimulation by *CpG* oligodeoxynucleotide (ODN) but not by LPS, while MDC responded to LPS but not to *CpG* ODN. In PDC, *CpG* ODN supported survival, activation (CD80, CD86, CD40, MHC class II), chemokine production (IL-8, IP-10) and maturation (CD83). CD40 ligand (CD40L) and

CpG ODN synergized to activate PDC and to stimulate the production of IFN-alpha and IL-12 including bioactive IL-12 p70. Previous incubation of PDC with IL-3 decreased the amount of *CpG*-induced IFN-alpha and shifted the cytokine response in favor of IL-12. *CpG* ODN-activated PDC showed an increased ability to stimulate proliferation of naive allogeneic CD4 T cells, but Th1 polarization of developing T cells required simultaneous activation of PDC by CD40 ligation and *CpG* ODN. *CpG* ODN-stimulated PDC expressed CCR7, which mediates homing to lymph nodes. In conclusion, our studies reveal that IL-12 p70 production by PDC is under strict control of two signals, an adequate exogenous microbial stimulus such as *CpG* ODN, and CD40L provided endogenously by activated T cells. Thus, *CpG* ODN acts as an enhancer of T cell help, while T cell-controlled restriction to foreign antigens is maintained.

DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: ...*CpG* DNA...

...*IFN-alpha *{*interferon*-*alpha*};

12/3,K/17 (Item 15 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13165685 BIOSIS NO.: 200100372834
Identification of *CpG* oligonucleotide sequences with high induction of IFN-alpha/beta in plasmacytoid dendritic cells.
AUTHOR: Krug Anne; Rothenfusser Simon; Hornung Veit; Jahrsdoerfer Bernd; Blackwell Susan; Ballas Zuhair K; Endres Stefan; Krieg Arthur M; Hartmann Gunther(a)
AUTHOR ADDRESS: (a)Abteilung fuer Klinische Pharmakologie, Medizinische Klinik Innenstadt, Ziemssenstrasse 1, D-80336, Munich: ghartmann@lrz.uni-muenchen.de**Germany
JOURNAL: European Journal of Immunology 31 (7):p2154-2163 July, 2001
MEDIUM: print
ISSN: 0014-2980
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

Identification of *CpG* oligonucleotide sequences with high induction of IFN-alpha/beta in plasmacytoid dendritic cells.

ABSTRACT: The immature plasmacytoid dendritic cell (PDC) is identical with the principal type I IFN-producing cell upon viral infection. Oligodeoxynucleotides which contain unmethylated *CpG* motifs (*CpG* ODN) are recognized by the vertebrate immune system. Previously, we described *CpG* ODN that strongly activate human B cells and human blood dendritic cells. Here we describe distinct *CpG*-containing oligonucleotide sequences which, in contrast to previously described *CpG* ODN, induced high amounts of IFN-alpha and IFN-beta in peripheral blood mononuclear cells (PBMC). Intracellular staining for IFN-alpha revealed that within PBMC *CpG* ODN-induced IFN-alpha is produced exclusively by PDC. Unlike IFN-alpha, TNF-alpha is up-regulated in PDC by all *CpG* ODN tested. Purified PDC responded to *CpG* ODN, demonstrating direct activation of PDC by *CpG* ODN. The most active sequence induced the production of up to 5 pg IFN-alpha per single PDC, resulting in more than 400 ng/ml IFN-alpha in the supernatant of PBMC enriched for PDC. The potency of *CpG* ODN to stimulate IFN-alpha correlated with their ability to stimulate NK cell lytic activity, while purified NK cells did not respond to *CpG* ODN. IFN-gamma production in PBMC was dependent on *CpG* ODN-induced IFN-alpha/beta as demonstrated by IFN-alpha/beta blocking antibodies. IFN-alpha-inducing *CpG* ODN strongly supported IFN-gamma production of TCR-triggered CD4 T cells but were less active than other *CpG* ODN in stimulating B cells. In conclusion our results demonstrate that particular *CpG* ODN sequences exist which, due to high IFN-alpha/beta induction in PDC, induce a set of immune responses typical

for viral infection.
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: *IFN-alpha *{*interferon*-*alpha*};
*IFN-beta *{interferon-beta...

...*IFN-gamma *{interferon-gamma...

...*CpG* motif

12/3,K/18 (Item 16 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13162683 BIOSIS NO.: 200100369832
Antimetastatic effect of *CpG* DNA mediated by type I IFN.
AUTHOR: Hafner Michael; Zawatzky Rainer; Hirtreiter Christian; Buurman Wim A; Echtenacher Bernd; Hehlgans Thomas; Maennel Daniela N(a)
AUTHOR ADDRESS: (a)Institute of Pathology/Tumor Immunology, University of Regensburg, F.J.-Strauss Allee 11, D-93042, Regensburg**Germany
JOURNAL: Cancer Research 61 (14):p5523-5528 July 15, 2001
MEDIUM: print
ISSN: 0008-5472
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

Antimetastatic effect of *CpG* DNA mediated by type I IFN.

ABSTRACT: The mechanisms involved in the antimetastatic effect of *CpG* -containing DNA were investigated in a mouse model of experimental metastasis. Tumor cell colony formation in lungs or livers of mice after i.v. inoculation with syngeneic fibrosarcoma or thymoma cells was determined. The i.v. injection of plasmid DNA or synthetic oligodeoxynucleotides (ODNs) containing unmethylated *CpG* motifs before tumor cell application strongly inhibited metastasis. Because synthetic *CpG*-ODN was not directly tumor cytotoxic, the target cells for this *CpG*-ODN effect were determined. The cytotoxic activity on standard natural killer (NK) targets as well as on fibrosarcoma cells of splenic NK cells and NKT cell-containing liver mononuclear cells derived from *CpG*-ODN-treated mice was strongly enhanced. Participation of NK/NKT cells in the *CpG*-induced antimetastatic effect was demonstrated by reduction of the antimetastatic effect in mice depleted of NK/NKT cells and beta2-microglobulin-deficient mice. Neutralization of interleukin 12, interleukin 18, or IFN-gamma did not interfere with the *CpG*-induced antimetastatic effect. However, in sera of *CpG*-ODN-treated mice, high levels of IFN-alpha were detected, and in IFN-alpha/beta receptor-deficient mice, the *CpG*-ODN-induced antimetastatic effect was strongly reduced. These data indicate that *CpG*-ODNs activate NK/NKT cells for antimetastatic activity indirectly via IFN-alpha/beta receptor activation. The exploitation of the stimulatory activity of *CpG*-ODN for the innate immune system might be a useful strategy for antimetastatic therapy.
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: ...*CpG*-containing...
...*IFN-alpha receptor *{*interferon*-*alpha* receptor...

...*IFN-beta receptor *{interferon-beta receptor...

...*IFN-gamma *{interferon-gamma

12/3,K/19 (Item 17 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13109519 BIOSIS NO.: 20[redacted]0316668
Role of *CpG* dinucleotides in a lupus-related oligodeoxynucleotide that activates natural *interferon*-*alpha* producing cells.
AUTHOR: Magnusson M(a); Magnusson S(a); Vallin H(a); Ronnblom L; Alm G(a)
AUTHOR ADDRESS: (a)Dept. of Veterinary Immunology, Biomedical Center, University Hospital, Uppsala**Sweden
JOURNAL: Lupus 10 (Supplement 1):pS30 2001
MEDIUM: print
CONFERENCE/MEETING: Sixth International Lupus Conference Barcelona, Spain March 24-28, 2001
ISSN: 0961-2033
RECORD TYPE: Citation
LANGUAGE: English
SUMMARY LANGUAGE: English

Role of *CpG* dinucleotides in a lupus-related oligodeoxynucleotide that activates natural *interferon*-*alpha* producing cells.
DESCRIPTORS:
...ORGANISMS: PARTS ETC: natural *interferon*-*alpha* producing cells
CHEMICALS & BIOCHEMICALS: *CpG* dinucleotides...
...*IFN-alpha *{*interferon*-*alpha*};

12/3,K/20 (Item 18 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13003445 BIOSIS NO.: 200100210594
***CpG* ODN enhance recall and primary peptide-specific human CTL responses.**
AUTHOR: Hornung V(a); Rothenfusser S(a); Ayyoub M; Krug A(a); Endres S(a); Speiser D E; Hartmann G(a)
AUTHOR ADDRESS: (a)Division of Clinical Pharmacology, Department of Internal Medicine, Ludwig-Maximilians-University, Munich**Germany
JOURNAL: Immunobiology 203 (1-2):p356 November, 2000
MEDIUM: print
CONFERENCE/MEETING: Joint Annual Meeting of the German and Dutch Societies of Immunology Duseldorf, Germany November 29-December 02, 2000
ISSN: 0171-2985
RECORD TYPE: Citation
LANGUAGE: English
SUMMARY LANGUAGE: English

***CpG* ODN enhance recall and primary peptide-specific human CTL responses.**
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: *CpG* oligonucleotides {*CpG* ODN...

...*IFN-alpha *{*interferon*-*alpha*}; *IFN-beta*

12/3,K/21 (Item 19 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

12746200 BIOSIS NO.: 200000499823
Adjuvant activities of immune response modifier R-848: Comparison with *CpG* ODN.
AUTHOR: Vasilakos John P(a); Smith Rose M A(a); Gibson Sheila J(a); Lindh Jana M(a); Pederson Linda K(a); Reiter Michael J(a); Smith Michael H; Tomai Mark A(a)
AUTHOR ADDRESS: (a)Department of Pharmacology, 3M Center, 3M Pharmaceuticals, Saint Paul, MN, 55144**USA
JOURNAL: Cellular Immunology 204 (1):p64-74 August 25, 2000
MEDIUM: print
ISSN: 0008-8749
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

SUMMARY LANGUAGE: English

Adjuvant activities of immune response modifier R-848: Comparison with *CpG* ODN.

...ABSTRACT: aspects of acquired immunity, including immunoglobulin secretion, in vivo cytokine production, and Ag-specific T cell cytokine production. Results are compared with those of Th1 *CpG* ODN. R-848 and *CpG* ODN are effective at skewing immunity in the presence of Alum toward a Th1 Ab response (IgG2a) and away from a Th2 Ab response (IgE).. R-848 and *CpG* ODN are also capable of initiating an immune response in the absence of additional adjuvant by specifically enhancing IgG2a levels. Both R-848 and imiquimod showed activity when given subcutaneously or orally, indicating that the compound mechanism was not through generation of a depot effect. Although *CpG* ODN behaves similarly to R-848, *CpG* ODN has a distinct cytokine profile, is more effective than R-848 when given with Alum in the priming dose, and is active only when...
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: *CpG* ODN...

...*IFN-alpha *{*interferon*-*alpha*}; *IFN-gamma *{interferon-gamma

12/3,K/22 (Item 20 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

12283791 BIOSIS NO.: 200000037293
Applications of immune stimulatory *CpG* DNA for antigen-specific and antigen-nonspecific cancer immunotherapy.
AUTHOR: Krieg A M(a); Ballas Z K(a); Hartmann G; Weiner G J(a)
AUTHOR ADDRESS: (a)VA Medical Center, University of Iowa Cancer Center, University of Iowa, Iowa City, IA**USA
JOURNAL: European Journal of Cancer 35 (SUPPL. 5):pS10 Oct., 1999
CONFERENCE/MEETING: 5th International Symposium on the Biological Therapy of Cancer: From Basic Research to Clinical Applications Munich, Germany October 27-30, 1999
SPONSOR: Biological Therapeutics Development Group of the European Organisation for Research and Treatment of Cancer
ISSN: 0959-8049
RECORD TYPE: Citation
LANGUAGE: English

Applications of immune stimulatory *CpG* DNA for antigen-specific and antigen-nonspecific cancer immunotherapy.
DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: *IFN-alpha *{*interferon*-*alpha*}-...
...*IFN-gamma *{interferon-gamma

12/3,K/23 (Item 21 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

12161662 BIOSIS NO.: 199900456511
How BCG led to the discovery of immunostimulatory DNA.
AUTHOR: Tokunaga Tohru(a); Yamamoto Toshiko; Yamamoto Saburo
AUTHOR ADDRESS: (a)Fukuoka Jo-Gakuin University, 3-42-1, Osa, Minami-ku, Fukuoka, 811-1313**Japan
JOURNAL: Japanese Journal of Infectious Diseases 52 (1):p1-11 Feb., 1999
ISSN: 1344-6304
DOCUMENT TYPE: Literature Review
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

...ABSTRACT: invertebrate[illegible]but not from vertebrates and p[illegible]ts, showed the above-mentioned biologic activities, and (ii) the activities were completely dependent on particular base sequences having *CpG* motifs but in a senseless manner. Details of those early studies carried out mainly in the 1980's have been reviewed in the first part...

...Research interests of immunostimulatory DNA were galvanized in 1995 by the report of Krieg et al. showing murine B cell activation with bacterial DNA containing *CpG* motifs. Within a short period of time, a huge number of papers have been published in this field, and the study has expanded rapidly and...

DESCRIPTORS:
CHEMICALS & BIOCHEMICALS: ...*IFN-alpha *{*interferon*-*alpha*};
*IFN-beta *{interferon-beta...

...*IFN-gamma *{interferon-gamma

?ds

Set	Items	Description
S1	0	(CPG) SAME (IFN-?)
S2	97	(CPG) AND (IFN-?)
S3	0	S2 AND POLY(G)
S4	3415	(INTERFERON (W) ALPHA) (W) (TREATMENT OR THERAPY)
S5	0	S2 AND S4
S6	137	S4 AND REVIEW
S7	70	S6 NOT PY<2000
S8	37	RD (unique items)
S9	10	S8 AND (CANCER OR TUMOR OR TUMOUR)
S10	0	S7 AND (VIRAL (W) INFECTION)
S11	23	S2 AND (INTERFERON (W) ALPHA)
S12	23	RD (unique items)

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    $46.55  Estimated cost File5
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    $29.54  Estimated cost File73
            OneSearch, 4 files,  4.655 DialUnits FileOS
     $3.96  TELNET
    $86.26  Estimated cost this search
    $86.64  Estimated total session cost   4.746 DialUnits
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Status: Signed Off. (17 minutes)